Wisconsin's
Capacity Development Program
for
Public Drinking Water Systems
2005 Report to the Governor

Department of Natural Resources
Bureau of Drinking Water & Groundwater
Michelle Schneider, Capacity Development Coordinator

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EXECUTIVE SUMMARY

Wisconsin's Capacity Development Program seeks to improve the ability of public water systems to consistently provide safe drinking water to the people of this state. This proactive program aims to assist public drinking water system owners and operators by improving their technical, managerial, and financial capabilities. Wisconsin Department of Natural Resources (DNR) staff are currently implementing the Capacity Development Program, as required by 1996 amendments to the Safe Drinking Water Act authorized by the U.S. Environmental Protection Agency (EPA).

DNR staff, along with other state agencies, partners and interested non-government organizations, are developing a cohesive process that seeks to identify the needs of public drinking water systems, develop comprehensive solutions, and incorporate the solutions into work plans that sustain program benefits into the future. Wisconsin's Capacity Development Program continues to unify and enhance existing assistance efforts as a means to provide a network of support for our public water system owners and operators so they can best meet new challenges as they arise. This network of people and their on-going activities become the tools in the process of improving the ability of public drinking water systems to provide safe drinking water. Some of these tools are in the form of guidance documents, engineering plan reviews, continuing education sessions or more immediate technical assistance as water system operators continue to bring safe drinking water to Wisconsin's citizens.

Wisconsin's public drinking water systems, particularly small systems, face many complex challenges while consistently providing safe drinking water to the public. Lack of knowledge about considerable state and federal regulations, lack of financial resources, inadequate management, and lack of access to affordable technical solutions are common issues public water systems face. Adequate solutions require a unified, sustained effort by many different agencies and organizations that work with public drinking water systems.

This document compiled for the benefit of the Governor, all members of government, and the public, as required by section 1420(c)(3) of the Safe Drinking Water Act, will address how Wisconsin is meeting those challenges, by reporting on the efficacy of the Capacity Development strategy and progress made toward improving the technical, managerial, and financial capacity of public water systems in the state.

This report will be made available to the public on the WIDNR's website, in the Capacity Development section, and a press release will be issued to inform the public of the availability of the Governor's Report.

1.1 INTRODUCTION

The 1996 amendments to the Safe Drinking Water Act (SDWA) required states to have a "Capacity Development Program" approved by the U.S. Environmental Protection Agency (EPA). Capacity Development is a program, which helps public drinking water systems strengthen their ability to consistently supply safe drinking water to their customers. The program aims to assist public drinking water systems' owners and operators, particularly small systems, improve their technical abilities, managerial skills, and financial viability to comply with the SDWA requirements.

The Capacity Development program is a proactive program that seeks increasing ability of the states' public drinking water systems to provide safe drinking water to its customers. Activities funded directly through the Capacity Development set-aside to the States' Drinking Water State Revolving Fund (DWSRF) seek to coordinate and unify technical assistance efforts of Wisconsin Department of Natural Resources (DNR), other state agencies, and non-government partner organizations. By working together the Capacity Development Program has been effective.

The following is a status report for the first five years of implementation for Wisconsin's Capacity Development Program. The report will focus on the efficacy of the Capacity Development strategy and progress toward improving technical capacity, managerial capacity, and financial capacity of the states' public drinking water systems. Completing this report fulfills federal requirements and allows for the full set-aside dollars to be allotted through the States' Drinking Water State Revolving Fund (DWSRF).

2.1 CAPACITY DEVELOPMENT PROGRAM OVERVIEW

The Capacity Development Program maintains a focus on small public drinking water systems. The 1996 SDWA amendments include initiatives, such as Capacity Development, to increase the resources available to small public drinking water systems, which often have the most difficult time complying with federal and state regulations. These "small systems," such as those serving schools, factories, and mobile home parks, often don't have specialized staff to operate and maintain their infrastructure. Providing water is not typically their primary business. The most common barriers faced by small system owners and operators as they try to acquire and maintain capacity include:

- Lack of technical knowledge about state and federal requirements and how to meet them;
- Lack of access to money;
- Lack of financial planning and management; and
- Lack of affordable technologies to comply with existing and new technologies.

Below is a list of key areas where capacity development is used as a tool for encouragement and improvement of public drinking water systems in Wisconsin:

- To encourage drinking water system infrastructure evaluation and improvement
- To improve water resource (quality and quantity) evaluations
- To encourage cooperation between state agencies
- To expand operational and managerial expertise to non-municipal drinking water systems
- To improve and expand operator training
- To encourage appropriate financial management and planning

The Capacity Development Program is funded through funds set-aside from the Drinking Water State Revolving Fund (DWSRF) authorized under the Safe Drinking Water Act. A one-time request of the amount of $400,000 was made in the FY 1997/1998 *Safe Drinking Water Act Intended Use Plan*. To date, the DNR reports expenditures of $361,715. The Capacity Development position will continue to be funded after use of the $400,000 by using program management set-aside money from the SRF.

The Capacity Development Program is organized into a strategy for *new* public drinking water systems and a strategy for *existing* public drinking water systems.
The capacity development program is managed by a Capacity Development coordinator on a project position. Each year the coordinator provides an annual report to Region V U.S. EPA on the status of accomplishments of Wisconsin's Capacity Development program. To date Wisconsin has satisfied all of the requirements for the Capacity Development. As part of their review, EPA recommended a permanent position to retain consistency and program momentum. The current project position is set to expire in June of 2007.

2.2 Capacity Development for New Public Drinking Water Systems

Before public drinking water systems of the state commence construction and operation, a comprehensive attempt is made to ensure ongoing technical, managerial, and financial capacity is achieved. Wisconsin Administrative Code Chapter NR 809 Subchapter VIII requires capacity evaluations for all new community and nontransient noncommunity (NTNC) water systems prior to construction. This code became effective on September 1, 1999. Written guidance targeting technical, managerial, and financial aspects of operating a drinking water system is distributed to owners and operators of small drinking water systems during the capacity evaluation process. A capacity approval and certification is issued to the owner of a new public drinking water system when appropriate plans and the capacity evaluation have been reviewed.

Capacity Development for New Municipal Drinking Water Systems:

A capacity evaluation is required for all new municipal drinking water systems. This type of drinking water system is owned by a city, town, or sanitary district. The evaluation is completed by the DNR as part of the system plan review process. Once the plans and capacity evaluation are approved, DNR staff will send a plan approval letter and capacity certification to the owner.

Capacity Development for New Other-Than-Municipal (OTM) Drinking Water Systems:

A capacity evaluation is completed by DNR staff as part of the plan review process for new OTM drinking water systems. This system type includes mobile home parks and condominium associations. Owners must fill out and sign DNR Form 3300-247 to provide DNR with system capacity information. The capacity evaluation uses much of the information furnished in the drinking water system plan. Written guidance is given to the administrators of the system to help understand the technical, managerial, and financial responsibilities of owning a drinking water system. Once the plan approval is granted and the capacity evaluation is reviewed, DNR staff will send an approval letter and capacity certification to the system owner.

Capacity Development for New Nontransient Noncommunity (NTNC) Drinking Water Systems:

Owners of new NTNC systems must complete DNR Form 3300-246. This type of system includes schools, day care centers, and factories. Written guidance is given to the administrators of the system to help understand the technical, managerial, and financial responsibilities of owning a drinking water system. The capacity evaluation process for new NTNC systems is divided into two groups, depending on plan review requirements and pumping capacity:

- Systems subject to DNR plan review (pumping capacity greater than 70 gallons per minute, as well as all schools): A capacity evaluation is completed as part of the plan review. Once the plan approval is granted and the capacity evaluation is reviewed, DNR will send an approval letter and capacity certification to the system owner.

- Systems NOT subject to DNR plan review (pumping capacity less than 70 gallons per minute): A capacity evaluation must still be performed prior to system construction. Owners should send the completed capacity evaluation form (3300-246) to the Capacity Development Coordinator. Once the capacity evaluation is reviewed by the DNR, an approval letter with capacity certification will be sent to the system owner.

2.3 Capacity Development for Existing Public Drinking Water Systems

Wisconsin's Capacity Development Program has developed a strategy to address technical, managerial, and financial capacity of existing public drinking water systems. The strategy was submitted to EPA in August of 2000. The strategy is a guide for the state to assist existing public drinking water systems.

The Capacity Development Strategy outlines proposed changes to the DNR's inspection and evaluation processes to include a capacity evaluation. The DNR is currently

modifying its sanitary survey process to incorporate and integrate technical, managerial, and financial capacity development elements into the existing sanitary survey.

Sanitary surveys of water systems are essential to assuring safe drinking water on a continuing basis. Surveys are a mechanism to detect construction, maintenance, and operational deficiencies before an unsafe water condition occurs. In cases where unsafe water occurs, the sanitary survey may be used to isolate the problem so that corrections can be made. By conducting surveys on a recurring cycle, new construction or system modifications can be checked for conformance with previous DNR approvals, and deterioration of facilities can also be evaluated, particularly if deterioration is more rapid than expected.

Two DNR internal work groups of public drinking water staff have met in the last four years. The first work group consisted of central office and regional staff and met several times in 2001. The group focused on the content of a revised sanitary survey, creating a new digital format of the survey to facilitate electronic storage of data, and formulating a new process of managing sanitary survey data. The second work group, consisting of DNR central office staff, met in the last quarter of 2001 and periodically in 2002. The group has dedicated a significant amount of time on developing a working prototype of a sanitary survey "tool" in the public drinking water database system (DWS). A contractor was hired, using capacity development set-aside funds, for the programming of changes to the DWS. The tool will be used as the basis for the new sanitary survey process.

Our goal is to create a standardized sanitary survey/capacity evaluation format for each type of public water system. The DNR intends to use a combination of document review and visual inspection to evaluate technical, managerial, and financial capacity. The new process will focus less on data collection and more on the evaluation of a water system's ability to provide safe drinking water now and into the future. This approach is consistent with the capacity development philosophy. The new format will be structured to facilitate entry of the information electronically into the DNR's DWS database. The information will then be used to prioritize which public water systems have capacity deficiencies and may be in need of further assistance. The database will also track problems water systems face on a regular basis. This information will be valuable in creation of "blanket" guidance sent to all public water systems. A prototype of the DWS based sanitary survey process was made available to staff in April 2003.

The EPA and the Association of State Drinking Water Administrators (ASDWA) have developed a list of eight minimum elements to be reviewed during a sanitary survey. These elements, as identified in the "EPA/State Joint Guidance on Sanitary Surveys," will be included in the revised sanitary survey. They include:

- Source
- Treatment
- Distribution system
- Finished water storage
- Pumps/pump facilities and controls

- Monitoring/reporting/data verification
- Water system management/operations
- Operator compliance with state requirements

DNR's Capacity Development Coordinator, in conjunction with other Safe Drinking Water Program staff, will prioritize systems with capacity deficiencies on an annual basis. The prioritization process will likely occur in the fall of each year to coincide with other DNR drinking water activities. Prioritization will focus on systems that are out of compliance with the SDWA requirements or that are on the verge of being out of compliance.

Capacity Development Toolbox:

Public drinking water systems in Wisconsin face a variety of challenges in their quest to provide safe drinking water at an affordable cost. However, there are many Safe Drinking Water Act (SDWA) programs and activities that can be used to address the obstacles encountered by existing public systems. These "tools" help systems acquire and/or enhance their technical, managerial, and financial capacity.

A number of capacity building activities and programs already exist. These tools will continue to be used to help public drinking water systems comply with the SDWA requirements. Some Capacity Development tools can be targeted towards specific systems based on the prioritization and capacity evaluation results. For instance, a system that does not have financial capacity may be offered additional, specific guidance on budgeting and long-term planning. Other tools will be used broadly to address common problems that occur with systems statewide, regardless of their capacity development status. One example of this type of tool is the annual mailing of monitoring letters and schedules to all public systems to help these systems plan and budget for upcoming water quality monitoring.

Some of Wisconsin's existing Capacity Development tools include:

DNR Plan Review: Wisconsin Administrative Code Chapter NR 108 states that final plans and specifications must be reviewed and approved by the DNR prior to construction for all municipal, all OTM systems, and for nontransient noncommunity systems with a pumping capacity greater than 70 gallons per minute. This applies to new water systems as well as improvements, extensions, and alterations to existing systems. DNR plan review provides the initial safeguard measure to strengthen a water system's ability to meet capacity and consistently supply safe drinking water.

Sanitary surveys (all public systems) and annual inspections (municipal): Sanitary surveys and inspections provide a comprehensive and accurate record of the components of water systems, assess the operating conditions and adequacy of the water system, and determine if past recommendations have been implemented effectively. DNR drinking water staff and county inspectors personally assist the owners and operators with issues related to their public water systems during sanitary surveys and inspections. DNR staff

will continue to use the sanitary survey and municipal inspections to evaluate systems, point out deficiencies, and make recommendations to help public water systems meet capacity.

DNR/County Contracts for Transient Noncommunity Systems: The DNR oversees contracts with 24 counties for sanitary surveys and coliform bacteria and nitrate monitoring at approximately 3,400 transient noncommunity systems each year. The results of this partnership with the counties have been outstanding. The samples are taken by licensed sanitarians instead of inexperienced system owners. Monitoring and reporting violations in these counties are almost nonexistent. MCL violations are greatly reduced mostly due to the elimination of false positives from poor sampling. State intervention on the system owner is lessened. Many of these transient facilities are licensed by the Wisconsin Department of Health and Family Services (DHFS) and the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and also have DNR water testing requirements. The majority of counties that are part of the contract are also agents for DHFS and DATCP so the system owner sees only one county inspector instead of three different state inspectors.

Drinking Water System Coalitions: This program is geared toward small municipal and OTM/NN systems. The purpose of the coalition groups is to establish forums where operators may discuss issues in an informal setting, network with other communities and systems in the same area, to share ideas and possibly equipment, and receive information on the new EPA regulations and discuss their implications.

A contract was renewed with the Wisconsin Rural Water Association to conduct meetings for the 22 established municipal coalition groups. Each coalition will have at least 4 meetings during 2005-2006. The Wisconsin Rural Water Association outlines the discussion topics, schedules of coalition locations, and brochures and reference materials. The contractor contacts the municipal and OTM/NN owners/operators to invite them to participate in the coalitions. The contractor plans and organizes the coalition meetings, acts as the facilitator during the meetings, and provides technical assistance and expertise to the groups as necessary.

The scope of this contract also includes conducting meetings for the 6 established OTM/NN coalitions and to create 4 more OTM/NN groups. Each of these coalitions will have at least 2 meetings during 2005-2006.

Contract evaluation is conducted as follows: Meeting evaluations are handed out after each coalition meeting that asked for comments on each topic presented. The evaluations also ask for comments on the usefulness of the meeting and additional information and topics that the attendees would like to see covered at future meetings. The scoring on the evaluations is from 1 to 10. Currently, the majority of evaluations have had a 9-10 rating. A quarterly meeting is also held between the WDNR, and Wisconsin Rural Water contract manager to assess how the contract is progressing and to discuss any issues or questions concerning the contract.

The state believes these meetings have been very successful. The current contract has one more yearly renewal.

Safe Drinking Water Loan Program: Wisconsin is using part of its federal Drinking Water State Revolving Fund allotment to provide low-interest loans to eligible municipal water systems. These loans, provided by the state's Safe Drinking Water Loan Program, may be used for infrastructure improvements. The following systems were awarded loans during the last three fiscal years (FFY 2002/SFY 2003 and FFY 2003/SFY 2004 and FFY 2004/SFY 2005):

Local Governmental Unit	Loan Amount
Algoma Sanitary District #1 (SFY 2003)	$8,029,114
Algoma Sanitary District #1 (SFY 2005)	$2,281,784
Arcadia, City of (SFY 2003)	$1,078,030
Benton, Village of (SFY 2003)	$601,600
Bowler, Village of (SFY 2004)	$679,005
Brownsville, Village of (SFY 2004)	$428,997
Cameron, Village of (SFY 2003)	$364,885
Chilton, City of (SFY 2004)	$526,734
Dickeyville, Village of (SFY 2003)	$1,078,163
Eagle, Village of (SFY 2004)	$2,161,248
Greenville Sanitary District #1 (SFY 2004	$350,915
Greenville Sanitary District #1 (SFY 2005)	$1,642,477
Hustisford, Village of (SFY 2004)	$1,057,341
Janesville, City of (SFY 2004)	$1,391,250
Janesville, City of (SFY 2005)	$2,150,000
Marinette, City of (SFY 2003)	$4,226,755
Mount Hope, Village of (SFY 2004)	$386,498
Mukwonago, Village of (SFY 2003)	$627,355
Neenah, City of (SFY 2005)	$16,666,667
Nekoosa, City of (SFY 2004)	$4,273,175
Oakfield, Village of (SFY 2003)	$2,200,000
Oregon, Village of (SFY 2004)	$432,818
Prairie du Chien, City of (SFY 2004)	$539,262
Racine, City of (SFY 2005)	$16,666,667
Sheboygan, City of (SFY 2004)	$3,152,000
Thorp, City of (SFY 2005)	$1,198,085
Tomah, City of (SFY 2004)	$1,049,932
Tomah, City of (SFY 2005)	$1,155,585
Two Rivers, City of (SFY 2004)	$4,269,641
Union Grove, City of (SFY 2005)	$464,102
Viroqua, City of (SFY 2004)	$1,017,329
Warrens, Village of (SFY 2004)	$583,621
Withee, Village of (SFY 2004)	$120,000
TOTAL	**$82,851,035**

Technical Assistance Contractors (OTM & NTNC): In April 2000, DNR awarded a contract to Wisconsin Rural Water Association (WRWA) to provide technical assistance to OTM and NTNC water system operators. One-on-one site visits with OTM and NTNC water systems: The WRWA visited selected OTMs and NNs in the period 9/1/2004-8/31/2005. Discussions with each system focused on monitoring for systems that have been habitual violators, source water waiver reviews, arsenic, disinfection byproducts, and public notification rules, vulnerability assessments, operator certification, operation and maintenance, and sanitary surveys. Small group sessions were also held. This information was summarized in a checklist for the OTMs and NNs, which includes any follow-up needed and any changes to the system inventory information.

Discussions for 2005-2006 will focus on training access to DNR website and navigation, self inspection form, handbook upkeep, vulnerability assessment letters, plan review, certified operators, monitoring assistance, violation follow-up, arsenic, and general information updates. All OTMs will be visited. All systems with potential high arsenic will be visited. Nontransient noncommunity systems with violation problems will be visited. Expected outputs are fewer M/R violations, fewer MCL violations, fewer PN violations, and greater knowledge of regulations.

Contract evaluation for this year will be based on reports generated from the drinking water data system indicating changes in compliance rates. WRWA has been submitting quarterly reports and has been meeting with the State quarterly to discuss the progress of the contracts. No problems have been encountered with these contracts. Overall, the contracts have been working very well.

One-on-one technical assistance from DNR staff (all public systems): DNR staff offer assistance to systems on a day-to-day basis to ensure that owners/operators understand the regulations. The DNR's regional drinking water staff provides technical assistance to owners and operators and conducts sanitary surveys of public water systems to ensure compliance with the primary drinking water regulations. State and local government staff will continue to develop positive dialogues with owners and operators to help them understand the SDWA requirements and build capacity.

Based on feedback from DNR staff, one-on-one assistance appears to be a successful compliance mechanism in the state of Wisconsin, particularly in response to the small public water systems that are not in compliance.

Operator Certification (MC, OTM, NTNC): An Operator Certification program was developed to cover the certification of operators for other-than-municipal (OTM) and nontransient noncommunity (NTNC) systems as required in the 1996 amendments to the SDWA. Wisconsin Administrative Code Chapter NR 114, which includes the municipal (MC) operator certification requirements, was revised and took effect on January 1, 2001. Section NR 114.30 of the code states that all OTM and NTNC systems must have a designated "operator-in-charge."

To be an operator-in-charge that person must be certified by the state of Wisconsin. Water system operators need base educational and experience requirements to qualify for operator certification. If qualified, the operator is required to submit an application and exam fee. Prior to the examinations, training courses are offered with the ultimate goal of a high pass rate. Each certified water system operator will also need to renew his or her certificate every 3 years by submitting a renewal fee and providing proof of continuing education credits/hours; 18 hours for municipal operators and 6 hours for OTM and NTNC operators.

OTM and NTNC operator certification training courses and exams began in March 2002. As of September 2004, 41 courses and exams have been held in locations throughout the state. A total of 1,071 operators have attended thus far resulting in just over 82% of OTM and NTNC systems having a certified operator. All OTM and NTNC systems have until March 2005 to designate a certified operator in charge of their water system. After this date, the DNR will begin the 3-step enforcement process to those systems still without a certified operator. The DNR believes that operator certification will be very valuable in helping water systems improve their technical, managerial, and financial capabilities to meet the SDWA requirements.

Attendees are required to complete an evaluation following the operator certification exam. This evaluation addresses the seminar, facility, instructor, and all learning aids provided to the operators. The DNR and its stakeholders are also actively revising the certification-training course to account for any new rules and regulations and to address specific compliance issues. In addition, the DNR is continuing to monitor compliance of the OTM and NTNC systems. To facilitate this, the DNR is in the process of creating regulatory type continuing education courses to address specific compliance issues.

As of March 2005 compliance deadline, only 50 OTM and NN systems did not yet have a certified operator. The DNR increased efforts to contact those remaining systems by telephone, letter or on-site visit reminding systems of their requirements and examination opportunities. As of August 15, 2005, less than 40 systems did not have a certified operator. Those remaining systems without a certified operator received a Letter of Noncompliance from the DNR informing them of their requirements, examination opportunities and continuing education requirements. All surface water system operators have exam opportunities twice per year at a minimum of six different locations. Exams are offered in the morning and in the afternoon at those locations.

All systems with a history of violation will receive follow-up from DNR Regional staff informing them of their examination opportunities or instructions to contract with a certified operator.

In February 2005, Wisconsin Rural Water Association (WRWA) was awarded a contract to conduct continuing education training that started July 2005. Training course topics were carefully determined by consulting with DNR Regional staff, WRWA Circuit Riders and other DNR staff. Training topics for July 2005-March 2006 include: Bacteriological Sampling & Public Notification, Water Sampling & Monitoring, Sanitary

Surveys & Capacity Development, Water Contamination & Treatment, and Notification & Reporting. Each training course is 3 hours long and worth 3 continuing education credits. All courses are regulatory topics and are free-of-charge. During July 2005, 8 training sessions were offered in 8 different locations throughout the State. During those sessions, 103 operators participated and received credit towards their required 6 continuing education credits.

Additional training and education comes in the form of information available on our website. We offer on-line training, a PDF copy of our Small Water System Manual as well as a Frequently Asked Question resource.

Certification is currently renewed for Municipal (MC) operators through the requirement of 18 hours of continuing education credits every 3 years. The renewal period for OTM and NN operators started March 2005. OTM and NN systems are required to pay a $45 renewal fee and complete 6 hours of continuing education credits every 3 years. The first OTM/NN renewals were due March 1, 2005 and 135 renewals have been processed from 3/1/05 to 8/15/05.

Other assistance activities: State agencies other than the DNR and many non-profit organizations assist drinking water systems with various programs, education sessions, training, and activities.

Wisconsin is also pursuing some new activities to help public water systems build technical, managerial, and financial capacity:

Additional training & workshops: The DNR would like to expand its public water system owner/operator training and workshop efforts to include a wider variety of Capacity Development topics. In coordination with stakeholders, contractors, and other state agencies, training programs may be developed in the following areas: operation and maintenance, financial planning, as well as comprehensive training about drinking water systems for municipal officials and governing boards.

Additional guidance: The DNR is creating additional guidance and informational materials to help owners, operators, and utility boards effectively manage public water systems.

2.4 Measuring Success & Reporting

On a regular basis, Wisconsin evaluates the success of its new systems capacity development efforts. The DNR tracks a number of drinking water programs to establish a baseline for measuring improvements in the capacity of Wisconsin's new public water systems. The DNR used the following methods to measure and evaluate its progress:

Microsoft Excel table/database: The DNR created a table to log and track the new public water systems that undergo capacity evaluations. The DNR is using the table as an interim method of tracking the new system capacity development information. The DNR

is currently enhancing its Drinking Water System database, discussed in the next section, to include capacity development information for new and existing systems.

Drinking Water System (DWS) database: The DWS stores drinking water system compliance information, including sampling results and violation tracking, for all public water systems in the state. The DWS is currently being modified to include the capacity status of public water systems and holistic evaluation data that will indicate the ability of the system to provide safe drinking water. The DNR's Capacity Development Coordinator regularly checks the status of new systems on the DWS database.

Capacity Development Conferences: The Capacity Development Coordinator attended a National Capacity Development Conference in 2004 and a Region 5-10 Capacity Development/Operator Certification Conference in 2005. These conferences promoted networking with other states to develop new capacity development tools and to learn about successes/challenges of other states' capacity development and operator certification programs.

Communication with DNR staff: During the capacity evaluation process, the DNR's Capacity Development Coordinator communicates regularly with DNR Water Supply Engineers, who review plans for new public water systems. The Capacity Development Coordinator and the plan reviewers work together to review and approve new public water systems.

DNR communication & education efforts: Wisconsin's Capacity Development Coordinator updated and distributed a fact sheet to educate new system owners and operators about Capacity Development. The "Financial Matters" fact sheet contains information about the financial responsibilities associated with owning and operating a public drinking water system. This fact sheet, along with other fact sheets related to Capacity Development, is provided to system owners/operators prior to conducting capacity evaluations. All Capacity Development fact sheets and forms can be found on DNR's web site.

The Capacity Development Coordinator has revised on a regular basis the capacity development section of the Bureau of Drinking Water and Groundwater web site. The web site is an important education tool for sharing capacity development information in an efficient manner statewide. The capacity development section is accessible from the bureau's home page:

http://www.dnr.state.wi.us/org/water/dwg/index.htm

The web site includes the following capacity development information:

- General information/background
- Fact sheets & brochures
- New system strategy requirements
- Capacity evaluation forms for new OTM and NTNC water systems

- Capacity Development Strategy for Existing Public Water Systems

These communication efforts provide additional documentation of Wisconsin's new systems capacity development implementation.

3.1 EFFICACY OF THE CAPACITY DEVELOPMENT STRATEGY

The Capacity Development Strategy document has been a good outline of the methods and resources available for assisting public drinking water systems to sustain technical, managerial, and financial capacity. The document has been a source of continuity in an environment that often has a variety of communication challenges due to policy changes, workload, and staff changes. Wisconsin's Capacity Development Program is developing a process to address these types of problems by offering public drinking water systems the tools and methods outlined in the strategy document through a variety of media vehicles. With a process in place, our Capacity Development Program will maintain momentum in addressing problem areas with public drinking water systems of Wisconsin.

Wisconsin's Capacity Development process has begun to identify issues drinking water systems face, address them in an annual work plan, direct resources to the particular issue, and coordinate solutions with stakeholder organizations, and finally report changes and outcomes to relevant parties. Issues are being identified in a number of ways, but DNR staff will soon begin to use information collected during the Sanitary Survey process as a primary resource for problem identification. Wisconsin's Capacity Development Coordinator will hold regular work group meetings with partner organizations to receive feedback on problems identified. Annual reports to U.S. EPA will outline key issues the program intends to address and demonstrate how Wisconsin will continue to be part of the national capacity development effort. Safe Drinking Water set-aside funds for Capacity Development as well as resources available through our partners and mentors will be used to address the identified problems. Wisconsin's Capacity Development Coordinator, using a wide variety of tools as outlined in section 2.2 and 2.3, will coordinate solutions. Reporting will reflect lessons learned and outcomes in the given Capacity Development process cycle.

4.1 PROGRESS TOWARD IMPROVING THE TECHNICAL, MANAGERIAL, AND FINANCIAL CAPACITY OF PUBLIC WATER SYSTEMS

The Capacity Development Program has identified areas where improvements in technical, managerial, and financial capacity have been achieved. Some of these areas include:

- Process challenges for Sanitary Surveys,

- Data consistency, storage and retrieval difficulties, and
- Ability of Public Water System owners and operators to develop long-term financial goals, including those affecting staffing and infrastructure needs, that anticipate changes to new regulations.
- Improvements in water system security

Development of a new Sanitary Survey process, that includes storing data on the DNR drinking water database (drinking water system), will aid in measuring improvements to technical, managerial, and financial capacity. New regulatory challenges in the near future will soon test the drinking water system's flexibility more completely; however preliminary results indicate this database is adaptable enough to meet the changes and thus has the overall ability to aid in the improvement of the capacity of drinking water systems.

The "Financial Matters" fact sheet developed by Wisconsin's Capacity Development Program staff informs drinking water system owners and operators of their financial responsibilities associated with operating a drinking water system. This document, which is distributed to other-than-municipal and nontransient noncommunity water systems, includes information on typical drinking water system construction costs, water quality monitoring costs, operation and maintenance costs, tools to help meet financial responsibilities, and new and proposed regulations. The fact sheet has been particularly helpful in getting owners of new drinking water systems to understand the significant monitoring costs that will be incurred.

New system evaluations have extended our guidance and review of new drinking water systems to include smaller systems. The owners of these new systems know estimated monitoring costs, operations costs, emergency costs, and source water quality concerns in their area before the drinking water system is constructed. Most importantly, the evaluation gets the owner involved in the process of constructing a new drinking water system, which is often overlooked amid the business of developing a new organization, housing development, or other facility.

While not funded directly by Capacity Development set-aside funds, the technical assistance contracts, which are funded by another Drinking Water State Revolving Fund set-aside, have been key tools in implementation of the Capacity Development program. Technical assistance has been improved through these contracts. Owners and operators have gotten involved in the process of continuing education by choosing the specific topic that would be useful to them. Technical assistance contractors delivered and explained the "Financial Matters" fact sheet and thus have been an effective avenue for delivering appropriate guidance to drinking water systems around the state.

Security of the state's public water systems has been a priority since 2001. The Department has assisted systems in completing federal requirements for vulnerability assessments and emergency response plan development. Sanitary surveys conducted by the Department every 5 years help to ensure emergency response plans are current. Materials were developed to assist city officials to organize "neighborhood watch"

programs to enlist their citizens in helping to protect water supply facilities. Emergency Response Sampling Kits were developed by an interagency workgroup and placed around the state to assist in sampling and analysis in the case of contamination of a water supply. Financial assistance to public utilities for security upgrades is being pursued through the Infrastructure Technical Assistance Advisory Group organized by the Office of Justice Assistance. The Department continues to work with agencies and partners to coordinate emergency preparedness at public water supplies.

Revisions to the Sanitary Survey inspection process are key to identification of needs, creation of guidance, and assessing the impacts of technical assistance efforts. Electronic data storage of drinking water system inspection results will allow the Capacity Development coordinator to search a database for systems that need assistance or search for problem issues across the state. Guidance and solutions can be created to address the problems and then the database can be used as an assessment tool to determine the effectiveness of the assistance.

5.1 CONCLUSIONS

Capacity Development for public drinking water systems is a young program that is still developing. Despite the program's relatively new arrival in Wisconsin, positive improvements to technical, managerial, and financial capacity of systems have been demonstrated. There are an extensive number of programs and activities performed by Wisconsin DNR and partner organizations that are all connected, but still remain available as independent tools to the Capacity Development Program. We are on a pathway to an integrated system of identifying inadequacies, determining the best avenue to address problems, and creating solutions that will correct the problems.

New challenges the Capacity Development Program will face in the near future include implementation of new rules and regulations such as the Groundwater Rule, decreasing groundwater quality and quantity, Wisconsin DNR staff turnover due to retirements, and developers who seek to circumvent requirements in order to speed construction and lower costs. The Capacity Development Program, with its proactive approach and wide variety of tools at its disposal, is in a good position to accept these challenges and present appropriate solutions.

For more information contact:

- Michelle Schneider, Capacity Development Coordinator, 101 S. Webster St., Madison, WI 53707, Phone: (608) 266-8470, Email: Michelle.M.Schneider@dnr.state.wi.us
- Capacity Development Program on the web: http://www.dnr.state.wi.us/org/water/dwg/CapDevl/CapDevIndex.htm

6.1 DEFINITIONS

Community drinking water system: A public drinking water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Any public water system serving 7 or more homes, 10 or more mobile homes, apartment units, or condominiums.

Drinking Water State Revolving Fund (DWSRF): Funds used to carry out directives of the Safe Drinking Water Act.

Municipal drinking water system: A community drinking water system that is owned by a county, city, village, town, town sanitary district, utility district, public institution, or a privately owned water utility serving any of the above.

Noncommunity drinking water system: A public drinking water system that is not a community water system.

Nontransient noncommunity (NTNC) drinking water system: A drinking water system that regularly serves at least 25 of the same people over 6 months of the year. Examples include drinking water systems at schools, day care centers, and factories.

Other-Than-Municipal (OTM) drinking water system: A community drinking water system that is not owned by a municipality. Examples include drinking water systems at mobile home parks, apartment buildings, and condominium associations.

Public drinking water system: A system providing water to the public for human consumption through piping, which has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents for at least 60 days per year. There are four types of public water systems in Wisconsin.

Transient noncommunity (TNC) drinking water system: A drinking water system that serves at least 25 people at least 60 days of the year but does not serve the same 25 people over 6 months of the year. Examples include drinking water systems at restaurants, motels, taverns, parks, and campgrounds.

Safe Drinking Water Act (SDWA): An U.S. Environmental Protection Agency act that seeks to ensure drinking water systems in the U.S. provide safe drinking water.

Sanitary Survey: An in-depth investigation of a drinking water system performed by DNR staff aimed to evaluate the adequacy of the water source, facilities, equipment, reporting, operation and maintenance, and operator training.

Water system: All structures, conduits and appurtenances by means of which water is delivered to consumers except piping and fixtures inside buildings served, and service pipes from building to street main.

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Bureau of Drinking Water and Groundwater

PUB-DG-071 2005

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